
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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MANUFACTURED ABRASIVES IN THE FIRST QUARTER 1997

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives from producers through non-mandatory surveys. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. The USGS estimates unreported data. Except where noted, quantities are reported in metric units.

Fused Aluminum Oxide

Production data for the first quarter of 1997 were collected from five companies operating ten plants in the United States and Canada. Reported production of regular-grade fused aluminum oxide in the first quarter was 21,000 tons valued at \$7.8 million, or \$371 per ton. Production during the same period of 1996 was 33,200 tons valued at \$12.1 million, or about \$364 per ton. Output of high-purity fused aluminum oxide in the first quarter was 3,540 tons. Production during the same period of 1996 was withheld to protect company proprietary data.

Based on the rate of production in the first quarter, the annual output of regular-grade fused aluminum oxide in 1997 is projected to be at least 84,000 tons valued at \$31 million; production in 1996 was 127,000 tons valued at \$44.9 million. Based on production in the first quarter, total 1997 output of high-purity fused aluminum oxide is projected to be at least 14,000 tons valued at \$8 million.

According to the Bureau of the Census, imports of crude fused aluminum oxide through February 1997 were 8,230 tons valued at \$4.1 million, or \$500 per ton. Of the reported imports, 63% were from Canada. Imports of refined and ground fused aluminum oxide during the same time period were 7,240 tons valued at \$5.7 million, or \$792 per ton. The top five countries exporting the largest quantities of refined and ground material to the United States, in descending order, were China (65%), Austria (12%), Canada (9%), Germany (4%), and Italy

(4%).

Exports of fused aluminum oxide through February 1997 were 2,060 tons. The exports were valued at \$3 million, or \$1,450 per ton.

As of January 1, 1997, The National Defense Stockpile contained 142,000 tons of crude fused aluminum oxide valued at \$33.3 million and 29,900 tons of fused aluminum oxide abrasive grain valued at \$15.7 million. However, all of the crude fused aluminum oxide and fused aluminum oxide abrasive grain in the stockpile is authorized by law for disposal. During the first quarter of 1997, the Department of Defense sold 461 tons of fused aluminum oxide abrasive grain; no crude fused aluminum oxide was sold. Sales of additional abrasive grain are planned for later in the year.

Silicon Carbide

The USGS collects silicon carbide production data from three companies operating three plants in the United States and Canada. Production in the first quarter was 18,600 tons at an estimated value of \$9.1 million.

Imports of crude silicon carbide through February 1997 were 41,000 tons valued at \$15.3 million. Imports from China were 32,300 tons valued at \$9.8 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$629 per ton. The average price of Chinese crude was \$303 per ton. Imports of refined and ground silicon carbide for the same period were 1,610 tons valued at \$3.5 million, or \$2,170 per ton. During the period, China and Canada were the largest suppliers of crude material, furnishing virtually all of the tonnage with shares of 78% and 12%, respectively. In descending order, Brazil (51%), Norway (20%), and Germany (10%) were the largest suppliers of refined and ground silicon carbide.

Exports of crude silicon carbide through February 1997 were

2,250 tons valued at \$1.7 million. Exports of refined and ground silicon carbide were 2,670 tons valued at \$2.1 million.

As of January 1, 1997, the National Defense Stockpile contained 14,500 tons of silicon carbide valued at \$6.9 million. However, existing legislation authorizes the disposal of all silicon carbide in the stockpile. The Department of Defense did not sell any silicon carbide in the stockpile during the first quarter of 1997, but plans to sell more than 4,000 tons of the material during the second quarter of the year.

Metallic Abrasives

Metallic abrasives information was collected from thirteen companies operating fourteen U.S. plants, including two new cut wire shot producers that began operations in 1996. During the first quarter of 1997, U.S. production of steel shot and grit was 67,800 tons, a 6% increase compared to the same period in 1996. First quarter production was valued at \$29.8 million or about \$440 per ton. Based on the first quarter rate of production, total 1997 output is projected to be about 271,000 tons valued at \$119 million; production in 1996 reached 240,000 tons valued at \$106 million.

Shipments of steel shot and grit in the first quarter were

61,300 tons valued at \$27.7 million, or \$452 per ton. Shipments during the first quarter of 1996 were 54,400 tons valued at \$24.8 million or \$456 per ton.

First quarter production of other types of metallic shot and grit (cut wire and reclaimed shot and grit) were 2,240 tons valued at \$4.0 million. Shipments for the first quarter were 2,210 tons valued at \$3.9 million.

Imports of all types of metallic shot and grit through February 1997 were 3,720 tons valued at \$1.8 million, or \$490 per ton. Canada was the largest supplier accounting for 93% of the tonnage imported.

Exports of all types of metallic abrasives through February 1997 were 4,550 tons valued at \$2.8 million, or \$606 per ton. Exports for 1996 were 24,900 tons valued at \$15.2 million, or \$609 per ton.

<p>If you have suggestions about how we can improve this report, please call (703) 648-7721.</p>
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TABLE 1
MANUFACTURED ABRASIVES 1/

(Metric tons unless otherwise specified)

Source and Product	1996								1997	
	First quarter		Second quarter		Third quarter		Fourth quarter		First quarter	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
United States and Canada: Production										
Silicon carbide	18,200	\$9,160 e/	18,800	\$9,490 e/	17,900	\$8,920 e/	18,700	\$9,470 e/	18,600	\$9,090 e/
Crude aluminum oxide:										
Regular: Abrasive and refractories	33,200	12,100	33,700	11,800	31,800	11,200	28,100	9,860	21,000	7,770
High purity	W	W	5,010 r/	2,780 r/	6,550 r/	3,800 r/	5,480 r/	3,220 r/	3,540	2,030
Total	33,200	12,100	38,700 r/	14,600 r/	38,300 r/	15,000 r/	33,600 r/	13,100 r/	24,500	9,790
United States: Production										
Steel shot and grit	63,900	28,100	62,900	28,100	54,900	24,200	58,100	25,500	67,800	29,800
Other shot and grit e/ 2/	2,070	3,020	1,880	3,680	2,110	4,120	2,000	3,960	2,240	4,020
Total	66,000	31,200	64,800	31,800	57,000	28,300	60,100	29,400	70,100	33,800
United States: Shipments										
Steel shot and grit	54,400	24,800	54,900	25,400	54,900	25,200	53,500	24,300	61,300	27,700
Other shot and grit e/ 2/	2,630	9,350	1,880	3,700	2,120	4,130	2,000	3,960	2,210	3,940
Total	57,000	34,100	56,800	29,100	57,100	29,300	55,500	28,300	63,500	31,600

e/ Estimated. r/ Revised. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes cut wire shot and reclaimed shot and grit from primary producers.